

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-003506**Date Inspected:** 15-Jul-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 2230**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 730**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** See below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG Fabrication**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. The QA Inspector observed the following:

Orthotropic Box Girder (OBG) Fabrication:

QA Inspector Mr. Li Yan Hua

Bay 1

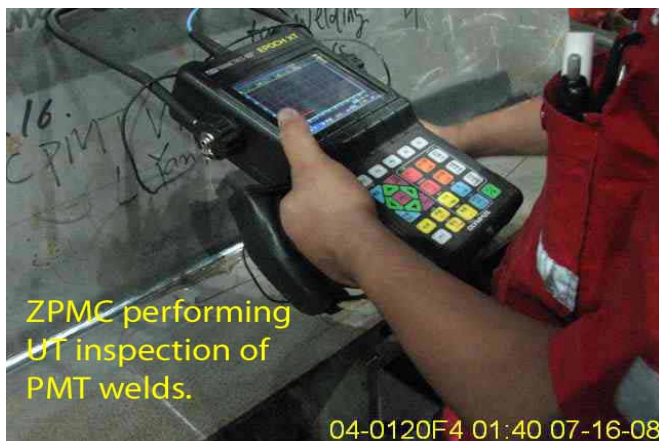
The QA Inspector monitored welding of closed rib Production Monitoring Test (PMT) representing deck plates DP116-001 and DP414-001 which were welded today starting at approximately 0100 hours using gantry #2. The QA Inspector observed six ZPMC welders using welding procedure specification WPS-B-T-2342-U1(Urib)-3 using the gas metal arc welding process for the root pass and submerged arc welding process for the cover pass of partial penetration groove welds on six PMT closed rib welds at the same time. ZPMC has multiple flux cored welding manipulators attached to a movable gantry that runs on a track along the length of the stiffener plates. The QA Inspector observed a welding travel speed of approximately 520 mm per hour for the root passes and 680 mm for the cover passes. As the welding commences, each of the welders is responsible for one of the welding heads. Welder Ms. Zhang Li Ping, stencil 218040 completed the root pass of weld #1 with a welding current of approximately 370 amps and 30.8 volts and the cover pass welding current of

## WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

approximately 680 amps and 25.0 volts. Welder Mr. Zhao Cheng Shuang, stencil 59400 completed the root pass of weld #2 with a welding current of approximately 360 amps and 30.8 volts and the cover pass welding current of approximately 670 amps and 24.8 volts. Welder Ms. Sing Yun Shu, stencil 59421 completed the root pass of weld #3 with a welding current of approximately 365 amps and 31.1 volts and the cover pass welding current of approximately 690 amps and 25.0 volts. Welder Mr. Xu Guo Yin, stencil 59443 completed the root pass of weld #4 with a welding current of approximately 370 amps and 30.0 volts and the cover pass welding current of approximately 680 amps and 26.0 volts. Welder Ms. Wang Xiao Zong, stencil 59445 completed the root pass of weld #5 with a welding current of approximately 360 amps and 30.9 volts and the cover pass welding current of approximately 680 amps and 24.9 volts. Welder Mr. Tiang Shuang Chen, stencil 201788 completed the root pass of weld #6 with a welding current of approximately 365 amps and 30.4 volts and the cover pass welding current of approximately 680 amps and 24.9 volts. The QA Inspector performed random visual inspection of the root pass and cover passes and items observed appear to comply with project specifications. Following completion of the welding ZPMC QC CWI Inspector Mr. Yi Yan Hua marked a 500 mm length of the welds as being the areas that are to be representative of this PMT test. The QA Inspector observed ZPMC NDE inspector Mr. Xue Hai Rong performing ultrasonic of each of the six welds in the areas where Mr. Hua had marked for PMT testing. Following Mr. Rong's UT acceptance the QA Inspector marked a total of 15 locations where macroetch samples are to be obtained. ZPMC then cut and prepared macroetch samples. ZPMC QC CWI Inspector Mr. Hua and ABF representative Ms. Lu Yun both visually inspected these macroetch samples and documented their acceptance on the ZPMC "Production Monitoring Test Plate Inspection Report sheet dated 7-16-08. The QA Inspector visually inspected each of these macroetch samples and items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector performed random visual inspection of deck plate DP-116-001 that had been previously magnetic particle inspected by ZPMC inspection personnel. The QA Inspector observed one tack weld appears to have a line of magnetic particles in the end of the weld. The QA Inspector showed ZPMC QC CWI Inspector Mr. Testino and American Bridge/Fluor Inspector Ms. Lu Yun the linear indication. ZPMC personnel used an electric grinder to remove this linear indication and ZPMC QC personnel performed a magnetic particle inspection of this area to ensure the linear indication has been removed.



### Summary of Conversations:

See above.

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## WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

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### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Ady Velasco 13816942685, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Dawson,Paul	Quality Assurance Inspector
<b>Reviewed By:</b>	Carreon,Albert	QA Reviewer

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